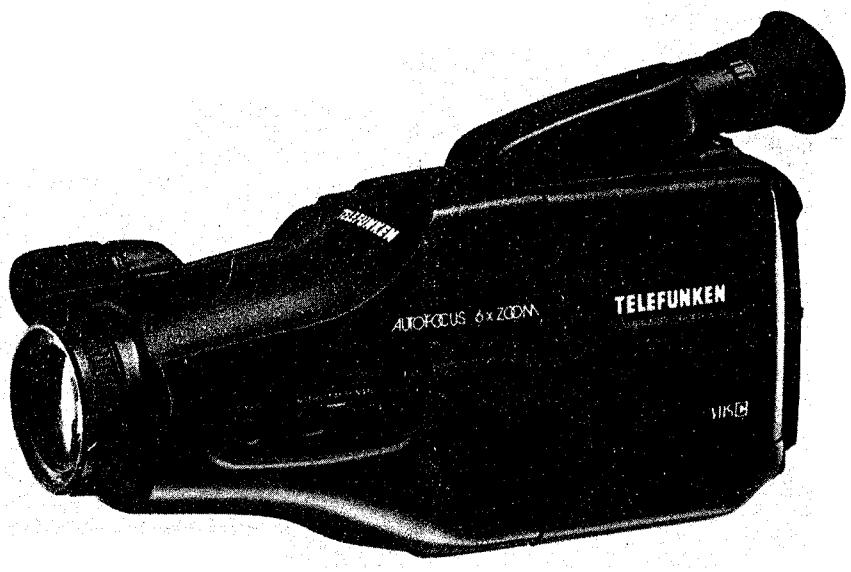
TELEFUNKEN SERVICE

AUDIOVISION
AUDIOVISION
AUDIOVISUEL

CAMERARECORDER
VIDEO MOVIE A 1000 P / VM 4300

Bestell-Nr. 319 494 451

STROMLAUFPLÄNE · SCHEMATIC DIAGRAMS



Service-Hinweise

Das Laufwerk, die Videoköpfe und alle Bandführungen benötigen nach ca. 500 Betriebsstunden periodische Reinigung und Pflege, um die normale Leistungsfähigkeit zu erhalten. Die nachstehenden Service-Hinweise sind als Kurzanleitung gedacht.

Pflege und Wartung

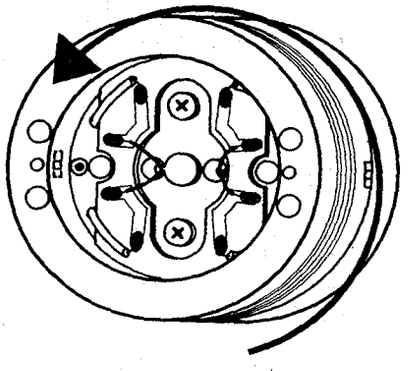
Die folgenden Teile benötigen eine periodische Reinigung und Fettung, um ihre normale Leistungsfähigkeit zu erhalten:

A. Trommelsystem

1. Die oberen und unteren Trommeln, der Löschkopf, die zwei Bandführungen und die zwei Führungsrollen müssen gelegentlich gereinigt werden. Da diese Teile direkten Kontakt mit dem Video-Band haben, nehmen sie leicht Staub an.

   Vorsicht:

   Wenn die Video-Köpfe auf der Kopftrommel gereinigt werden, sind sie nicht in senkrechter Richtung zu bearbeiten. Mit möglichst sanfter Hin- und Rückbewegung in Richtung des Bandweges die Trommel säubern, da die Köpfe aus Ferrit hergestellt sind und leicht zerbrechen können.
2. Zum Reinigen ausschließlich ein staubfreies Ledertuch benutzen, welches mit reinem Alkohol angefeuchtet wurde.
3. Nachdem die Teile mit Alkohol gereinigt wurden, sollten sie einige Zeit trocknen, bevor das Cassetten-Band benutzt wird, da der Alkohol das Band beschädigen könnte.



B. Andruckrolle und Capstan-Welle

1. Staub an der Andruckrolle oder der Capstan-Welle kann deren Funktionsfähigkeit beeinträchtigen.
2. Die Oberfläche der Andruckrolle und die Capstan-Welle sollten mit einer milden Waschmittellösung und einem staubfreien Tuch gereinigt werden.

Achtung:

Alkohol kann Gummi angreifen.

Service Instructions

The mechanism, the video heads and all tape guides require periodic cleaning and attention after approximately 500 operating hours to maintain the normal performance capability. The adjacent Service-Notes are to be regarded as abridged instructions.

Cleaning and maintenance

The following parts require a periodic cleaning and lubrication to retain their normal performance.

A. Drum system

1. Clean the upper and lower drums, the full erase head, the two guide poles and the two guide rollers occasionally. Since these parts make direct contact with the video tape they tend to collect dust.

   Caution:

   When cleaning the video heads on the upper drum, DO NOT clean them with vertical strokes. Use only a gentle to and fro movement in the direction of the tape travel. Take great care as the heads are made of ferrite and are very fragile.
2. For cleaning use a chamois leather moistened with pure isopropyl alcohol.
3. After cleaning with alcohol, allow the parts to dry before using a cassette tape. Alcohol can damage the tape.

Reinigung der Kopftrommel
Head drum cleaning

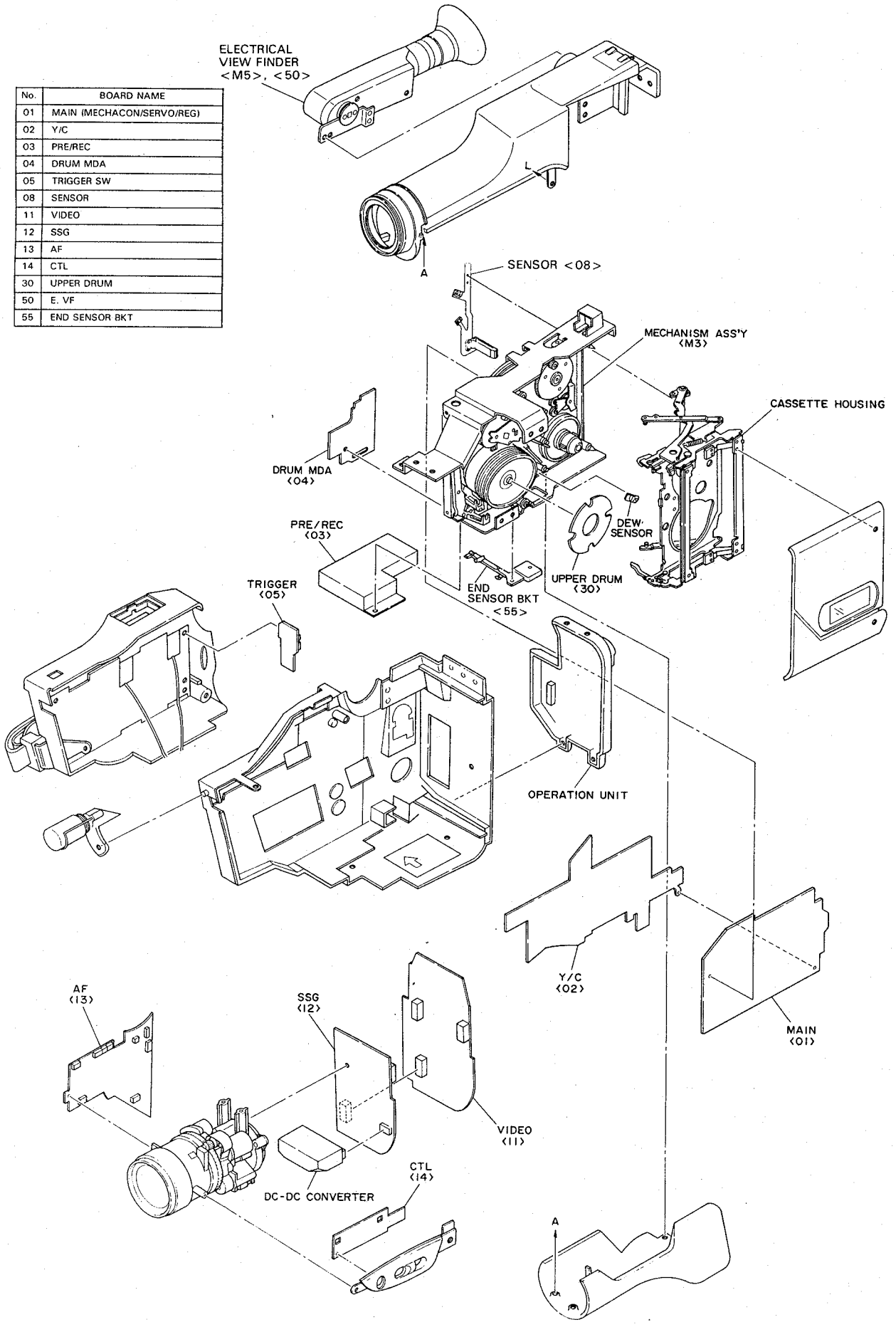
B. Pinch roller and capstan shaft

1. Dust on the pinch roller or the capstan shaft can impair their operation.
2. Clean the pinch roller surface and the capstan shaft with a mild detergent solution and a lint-free cloth.

Note:

Alcohol can cause rubber to deteriorate.

No.	BOARD NAME
01	MAIN (MECHACON/SERVO/REG)
02	Y/C
03	PRE/REC
04	DRUM MDA
05	TRIGGER SW
08	SENSOR
11	VIDEO
12	SSG
13	AF
14	CTL
30	UPPER DRUM
50	E. VF
55	END SENSOR BKT



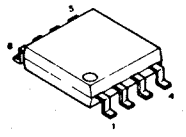
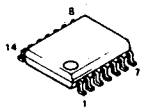
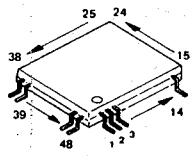
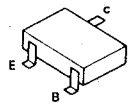
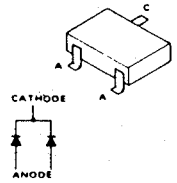
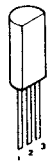
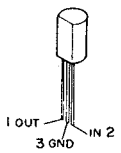
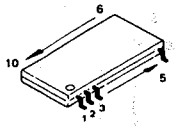
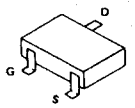
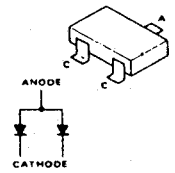
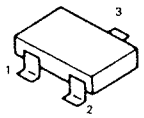
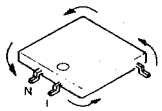
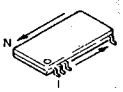
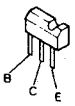
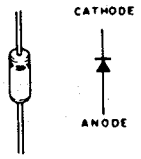
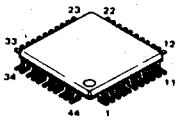
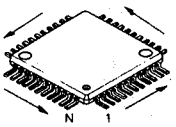
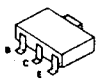
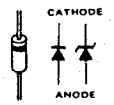
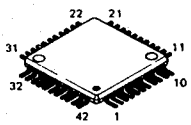
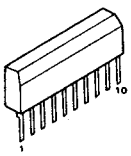
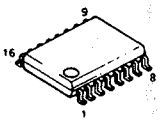
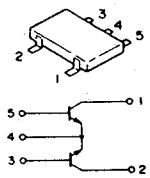
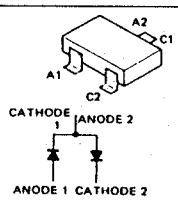
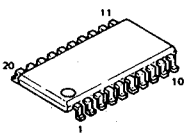
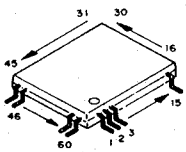
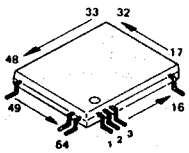
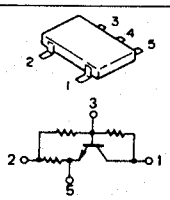
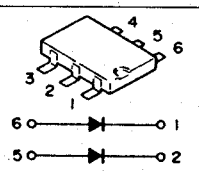
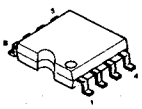
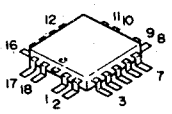
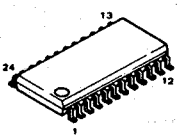
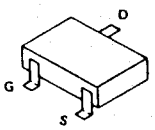
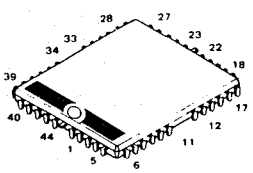
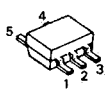
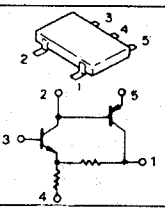
Lageplan der Leiterplatten - Position plan of P.C.B.'s

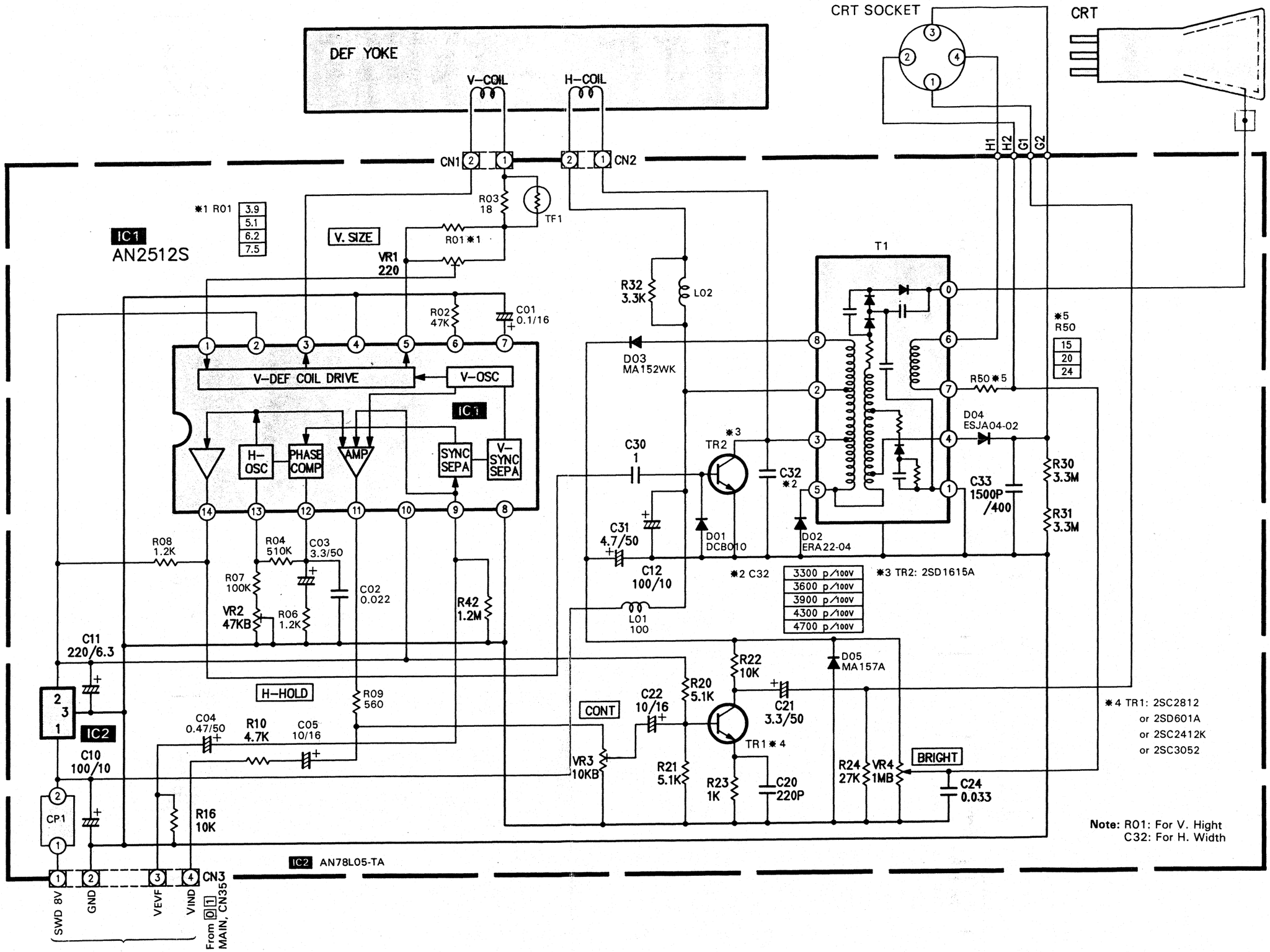
IC		
	NAME	L
A	AN1393S AN8009	1A 2B
B	BA10324F BA7288K BA7751AF BU4052BF BU4584BF	1B 4A 7C 5C 1B
H	HA118020MA HA118025MP-XE HA118118MA-XE HA13475MP	8A 8A 3B 7B
L	LA7316 LB1617M LM2904E	7C 3C 1A
M	MN12821(QR) MN1888JWT MSM6844MS-XE MSM6864MS-XE1 MS6964-3MS-XE1 MV1095 M5218FP M5236ML M54543ASL	3A 2C 1A 1A 1A 4B 5B
S	S-8052ANB-NE-X S-8054HN S-81252HG	4B 4B 2A
T	TA8713BF TC4S66F TC4S71F TC4S81F TC6025AF TC7S00F TC7S04F TC7S32F	3C 8B 8B 8B 6B 8B 8B 8B
U	UPC2371GH UPC319G2 UPC324G2 UPC358G2 UPC393G2 UPD6147G UPD6451GT-603 UPD75006GB-519	1C 1B 1B 1A 1A 2C 4C
V	VC2094A VC2095 VC2524 VC5035	4C 2C 4C 3C

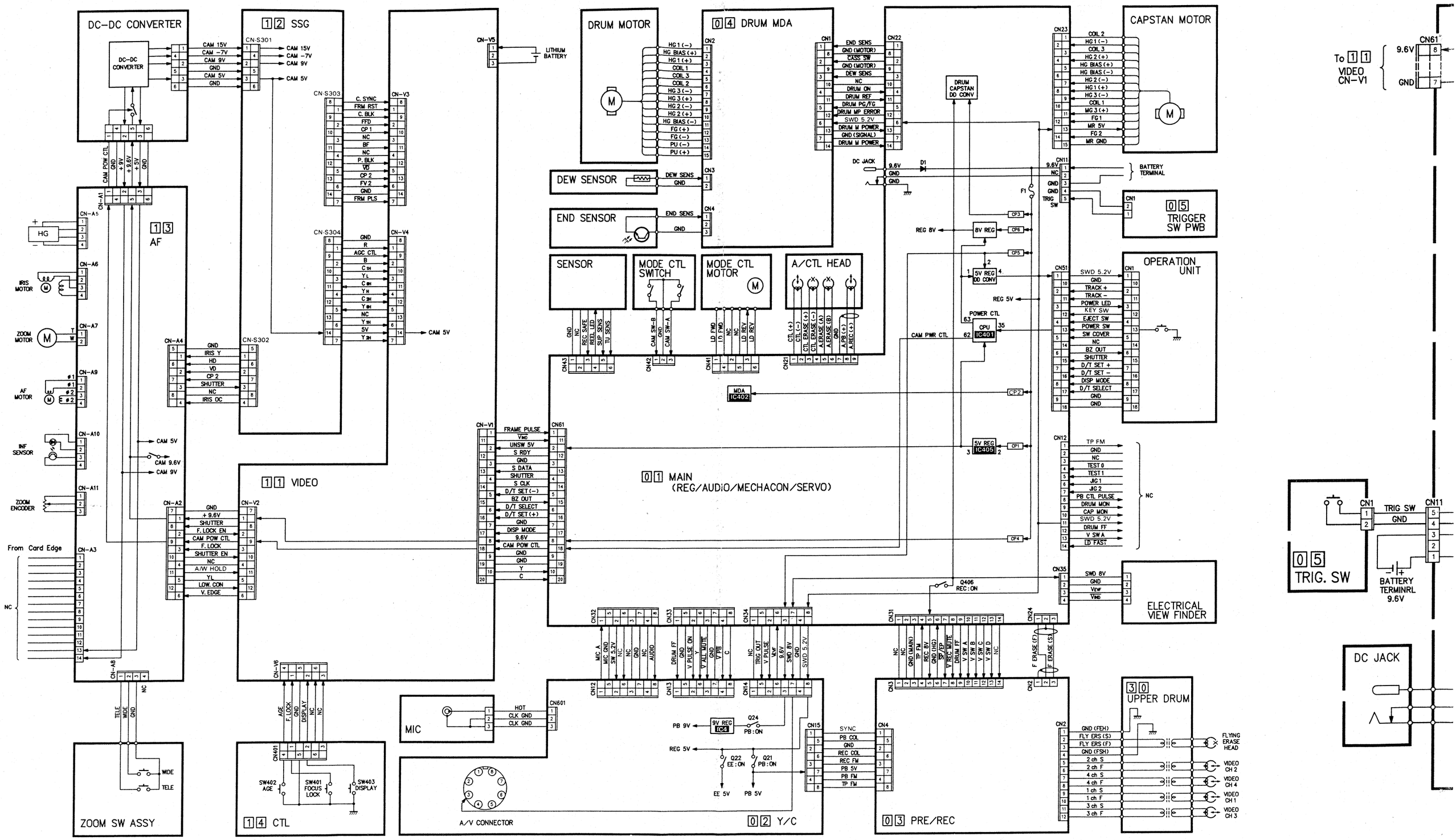
TRANSISTOR		
	NAME	L
DTA	DTA114EU DTA123YU DTA143EU DTA144EU	1D 1D 1D 1D
DTB	DTB113ZK DTB798	1D 8D
DTC	DTC114EU DTC114WU DTC144EU	1D 1D 1D
F	FMG1 FMW3	6D 5D
2SA	2SA1532 2SA1576 2SA1577	1D 1D 1D
2SB	2SB1009 2SB624-T2BBV4 2SB798	3D 1D 4D
2SC	2SC3936 2SC4081	1D 1D
2SD	2SD1819	1D
2SK	2SK665	2D
2SJ	2SJ146	7D

DIODE		
	NAME	L
D	DAN202U DA204K DA204U	1E 5E 5E
E	ERA81-004-F	3E
I	IMN10	6E
M	MA141WA MA141WK MA143	2E 1E 5E
R	RB451F RB715F RD6.8MB1	4E 4E 4E
S	SB-05-05CP-X	2E
	1SS99	4E

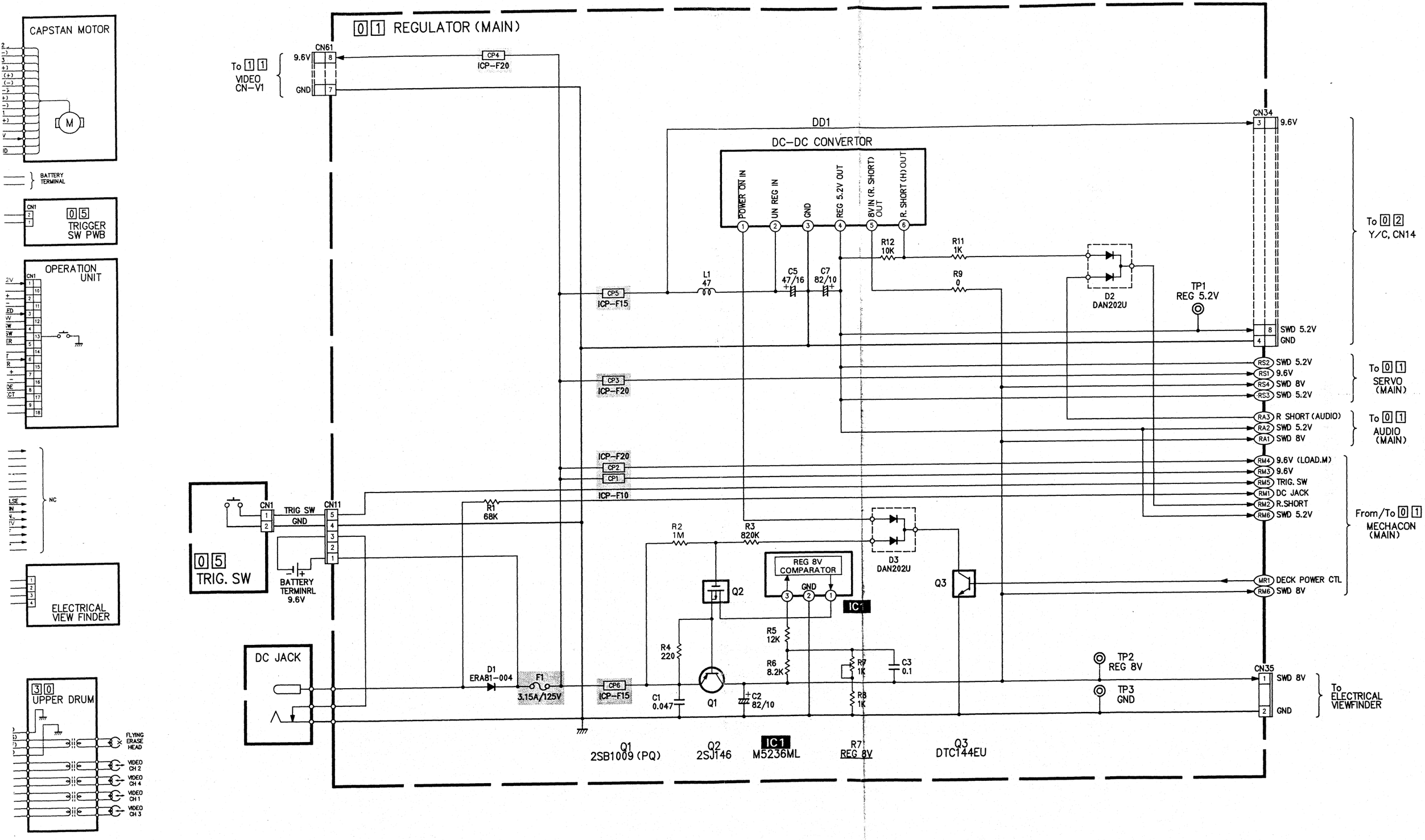
Halbleiter- Anschlüsse - Semiconductor shapes

	IC			TRANSISTOR	DIODE
	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7					
8		 1. IN 2. IN 3. GND 4. OUT 5. Vcc			

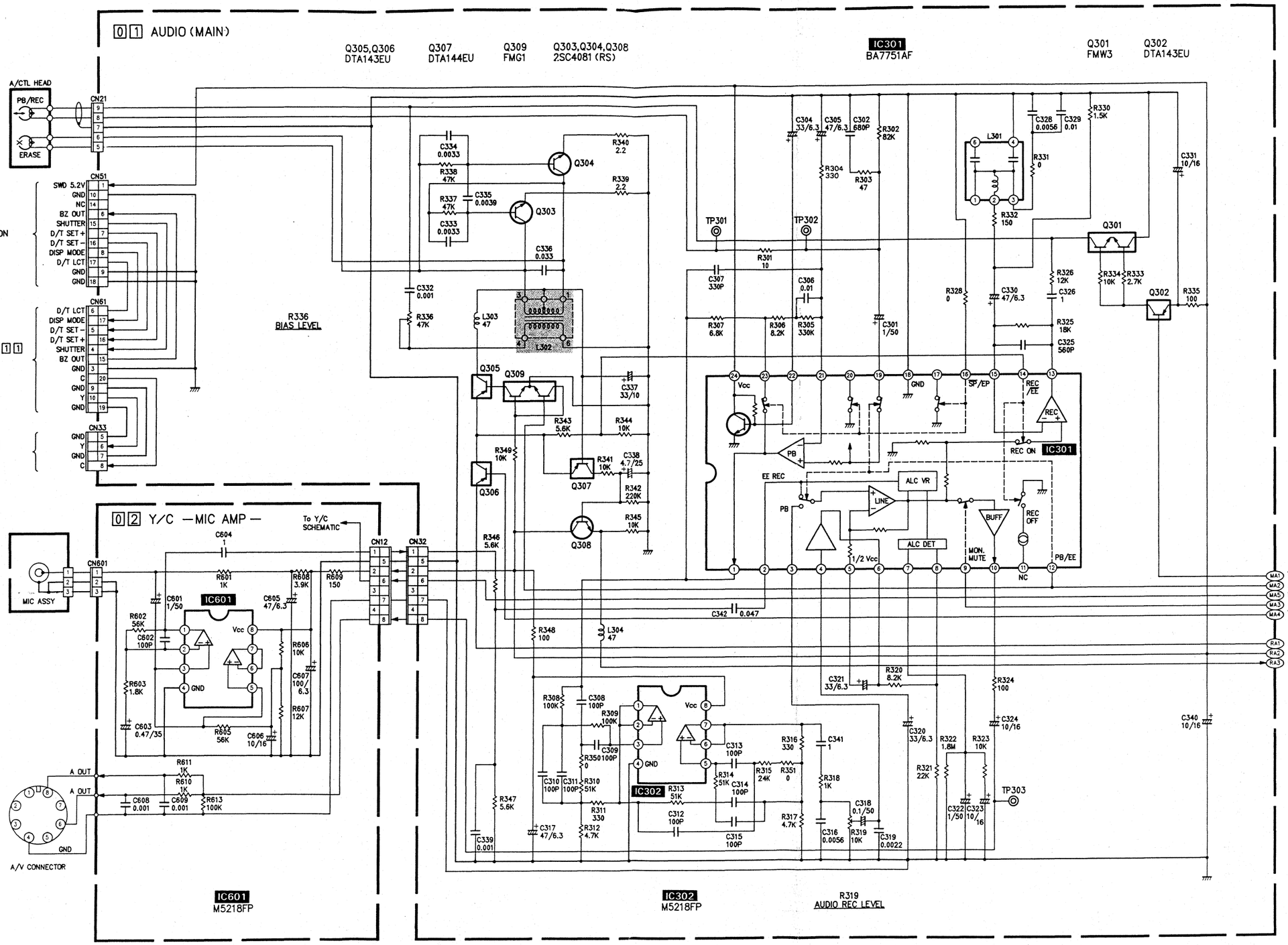

DEF YOKE
V-COIL
H-COIL
CN1
CN2
CRT SOCKET
CRT
H1
H2
G1
G2
IC1
AN2512S
*1 R01
3.9
5.1
6.2
7.5
V. SIZE
VR1
220
R01 *1
R03
18
TF1
R02
47K
C01
0.1/16
V-DEF COIL DRIVE
V-OSC
H-OSC
PHASE COMP
AMP
SYNC SEPA
V-SYNC SEPA
R08
1.2K
R04
510K
C03
3.3/50
R07
100K
VR2
47KB
R06
1.2K
C02
0.022
R42
1.2M
C11
220/6.3
H-HOLD
R09
560
C04
0.47/50
R10
4.7K
C05
10/16
C10
100/10
IC2
CP1
R16
10K
IC2 AN78L05-TA
CN3
SWD 8V
GND
VEVF
VIND
From MAIN, CN35
R32
3.3K
L02
D03
MA152WK
T1
*5
R50
15
20
24
R50 *5
D04
ESJA04-02
C30
1
TR2
*3
C32
*2
C33
1500P
/400
R30
3.3M
R31
3.3M
C31
4.7/50
C12
100/10
L01
100
D01
DCB010
D02
ERA22-04
*2 C32
3300 p/100V
3600 p/100V
3900 p/100V
4300 p/100V
4700 p/100V
*3 TR2: 2SD1615A
R22
10K
D05
MA157A
C22
10/16
R20
5.1K
CONT
C21
3.3/50
TR1 *4
VR3
10KB
R21
5.1K
R23
1K
C20
220P
R24
27K
VR4
1MB
BRIGHT
C24
0.033
*4 TR1: 2SC2812
or 2SD601A
or 2SC2412K
or 2SC3052
Note: R01: For V. Hight
C32: For H. Width

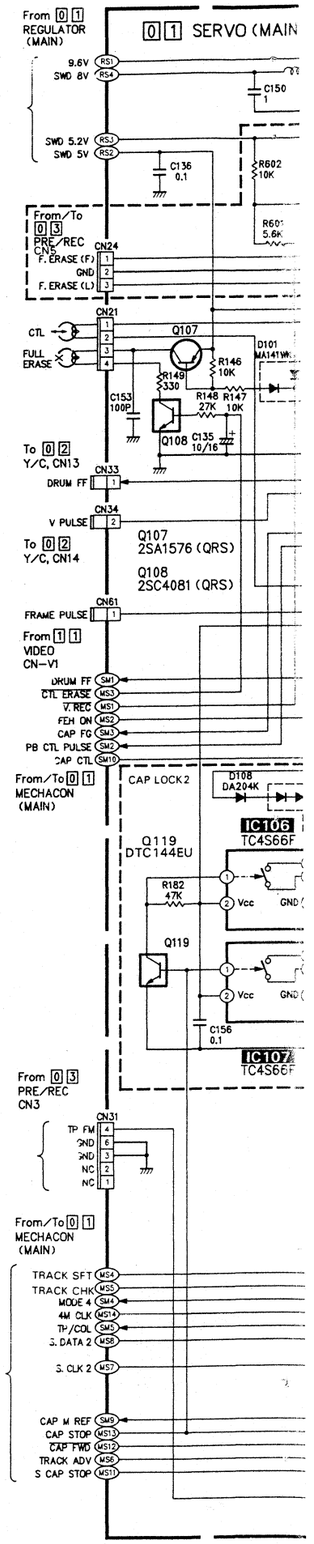


Gesamtverdrahtungsplan - Overall wiring diagram

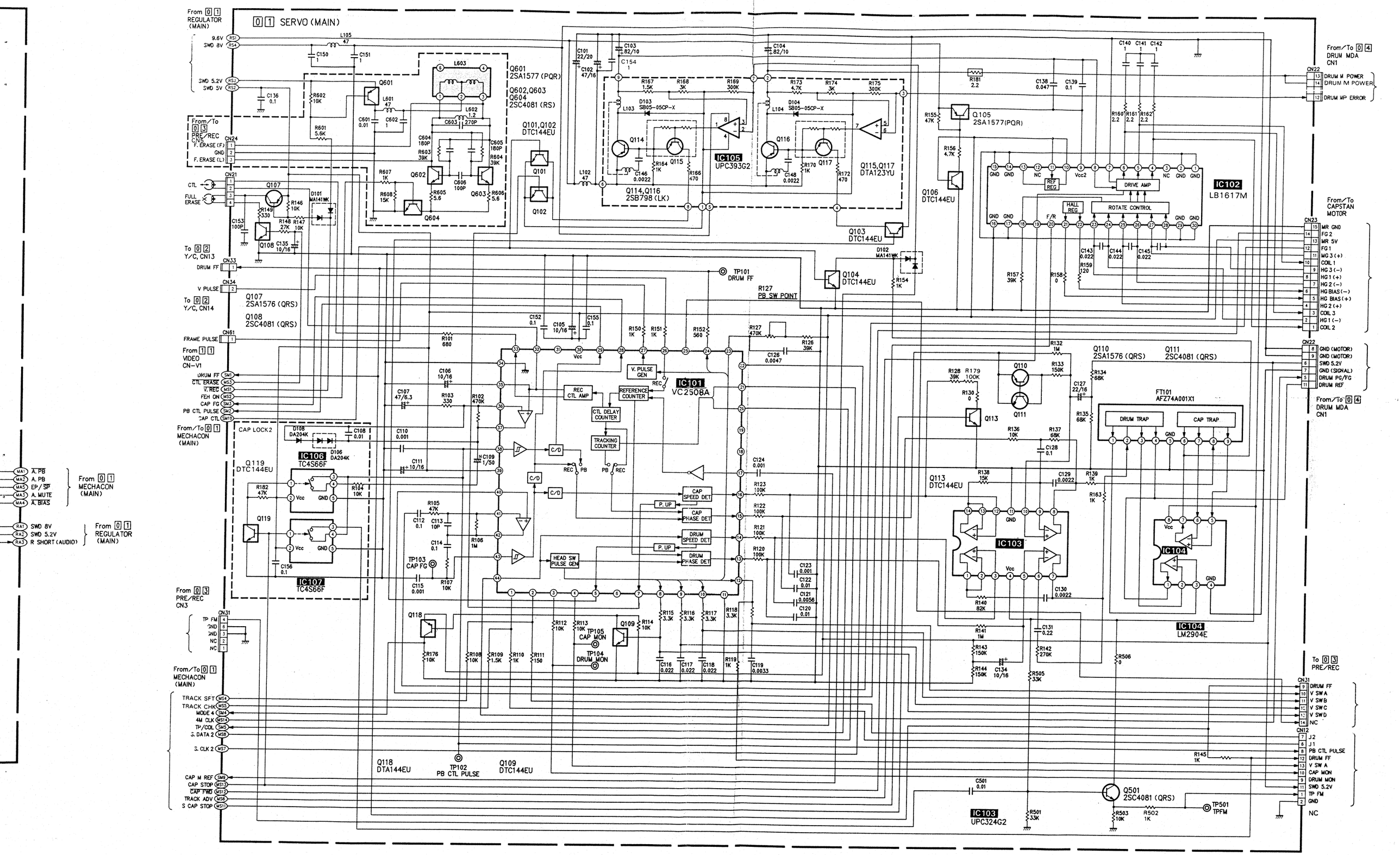


Stromversorgung - Regulator

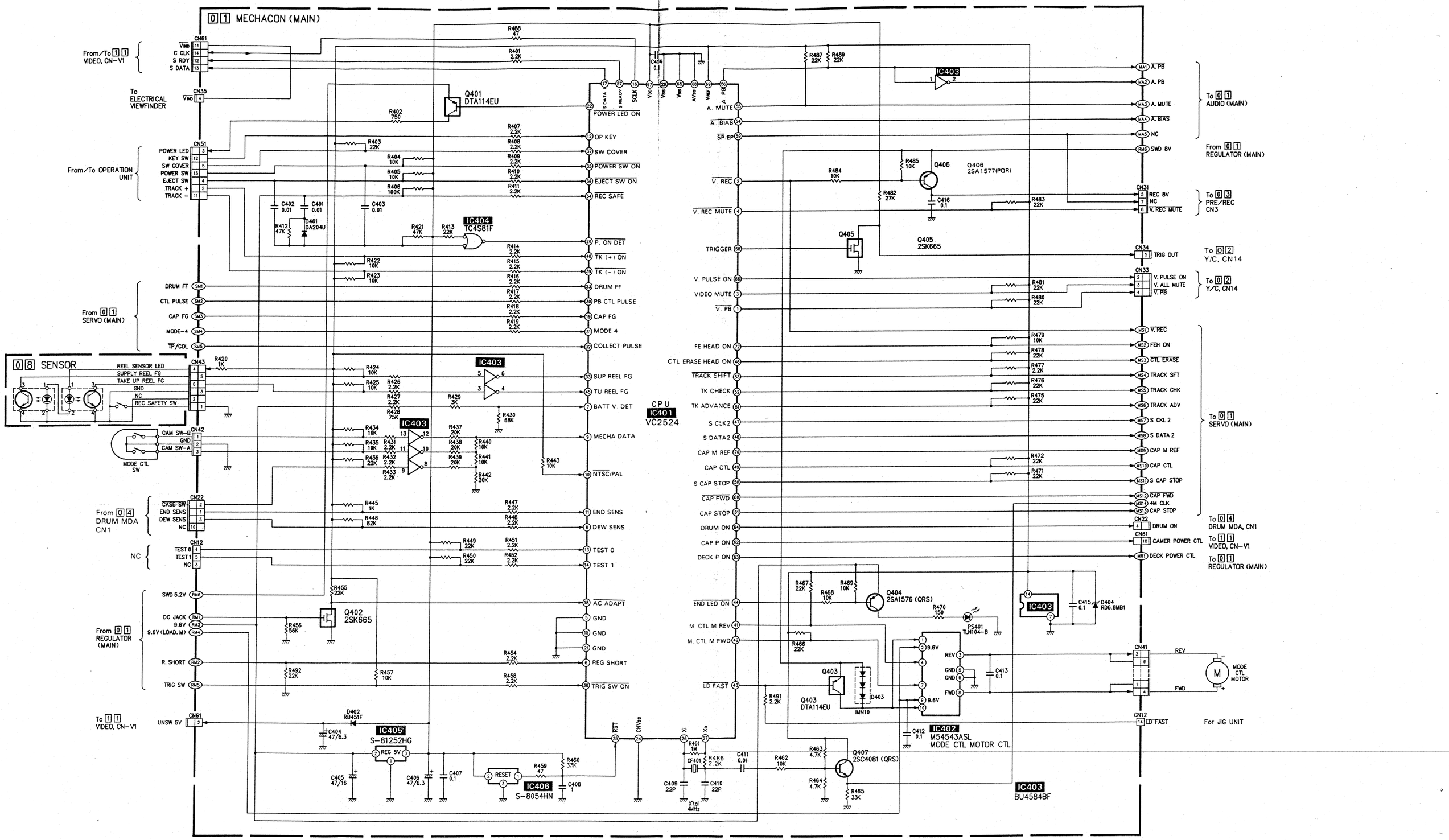

01 AUDIO (MAIN)
Q305,Q306 DTA143EU
Q307 DTA144EU
Q309 FMG1
Q303,Q304,Q308 2SC4081 (RS)
IC301 BA7751AF
Q301 FMW3
Q302 DTA143EU
A/CTL HEAD
PB/REC
ERASE
CN21
CN51
CN61
CN33
From/To OPERATION UNIT
From/To 11 VIDEO CN-V1
To 02 Y/C CN33
R336 BIAS LEVEL
TP301
TP302
TP303
Vcc
GND
SP/EP
REC/EE
REC ON
PB
EE REC
ALC VR
LINE
BUFF
REC OFF
ALC DET
MON. MUTE
PB/EE
1/2 Vcc
NC
02 Y/C —MIC AMP—
To Y/C SCHEMATIC
CN601
MIC ASSY
CN12
CN32
IC601
M5218FP
A OUT
A OUT
GND
A/V CONNECTOR
IC302
M5218FP
R319 AUDIO REC LEVEL
A. PB
A. PB
EP/SP
A. MUTE
A. BIAS
From 01 MECHACON (MAIN)
SWD 8V
SWD 5.2V
R SHORT (AUDIO)
From 01 REGULATOR (MAIN)


From 01 REGULATOR (MAIN)
01 SERVO (MAIN
9.6V
SWD 8V
SWD 5.2V
SWD 5V
From/To 03 PRE/REC CN2
F. ERASE (F)
GND
F. ERASE (L)
CTL
FULL ERASE
Q107
Q108
Q101
To 02 Y/C, CN13
DRUM FF
To 02 Y/C, CN14
V PULSE
Q107 2SA1576 (QRS)
Q108 2SC4081 (QRS)
FRAME PULSE
From 11 VIDEO CN-V1
DRUM FF
CTL ERASE
V. REC
FEH ON
CAP FG
PB CTL PULSE
CAP CTL
From/To 01 MECHACON (MAIN)
CAP LOCK2
IC106 TC4S66F
Q119 DTC144EU
IC107 TC4S66F
From 03 PRE/REC CN3
From/To 01 MECHACON (MAIN)
TRACK SFT
TRACK CHK
MODE 4
4M CLK
TP/COL
S. DATA 2
S. CLK 2
CAP M REF
CAP STOP
CAP FWD
TRACK ADV
S CAP STOP

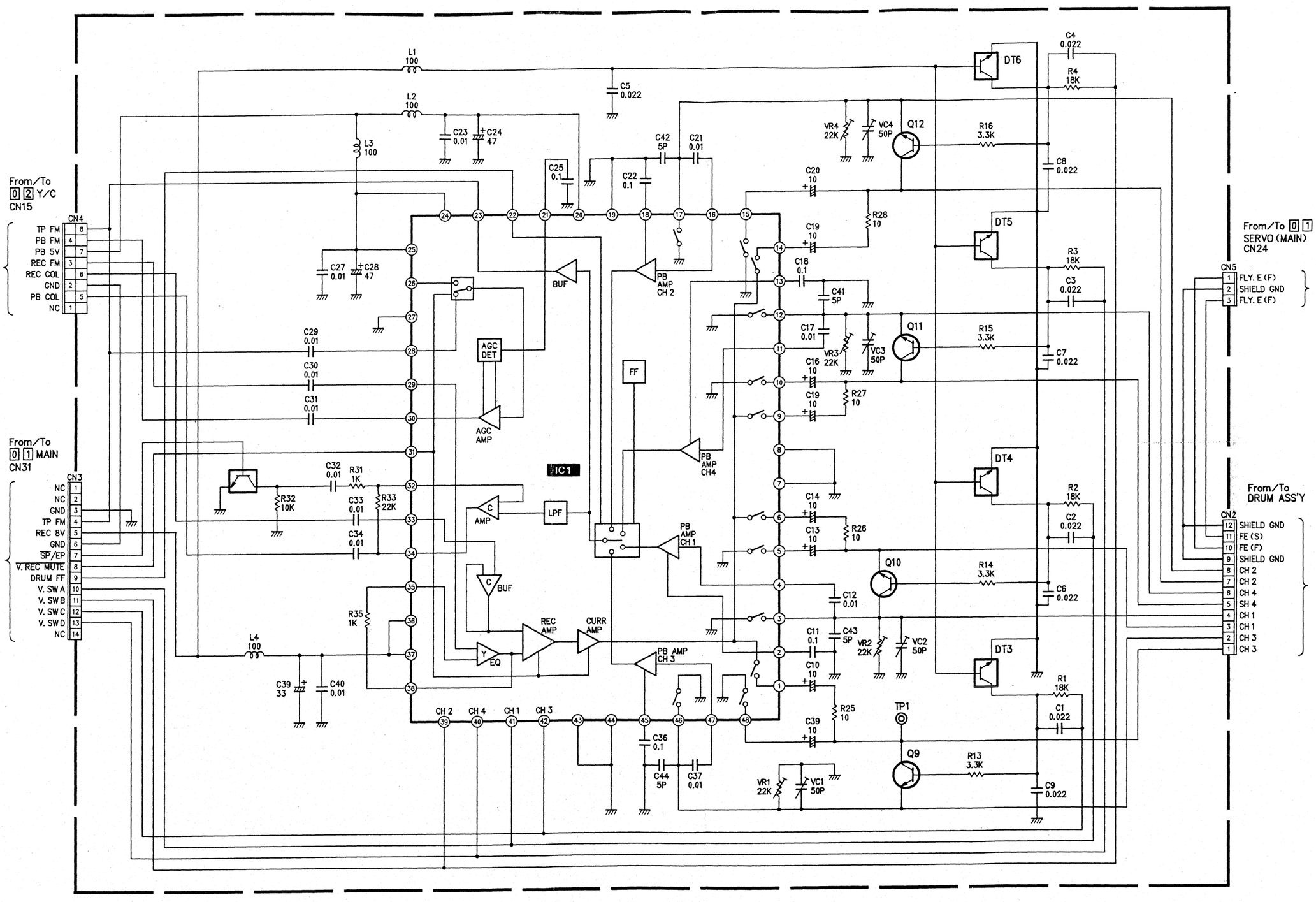
Audio - Audio


0 1 SERVO (MAIN)
From 0 1 REGULATOR (MAIN)
9.6V RS1
SWD 8V RS4
SWD 5.2V RS3
SWD 5V RS2
L105 47
C150 1
C151 1
C136 0.1
L603
Q601 2SA1577 (PQR)
Q602,Q603 Q604 2SC4081 (RS)
Q601
L601 47
L602 1.2
C603 270P
C601 0.01
C602 1
R602 10K
R601 5.6K
From/To 0 3 PRE/REC CN5
CN24
F. ERASE (F)
GND
F. ERASE (L)
CN21
CTL
FULL ERASE
Q107
R146 10K
D101 MA141WK
R149 330
R148 27K
R147 10K
C153 100P
Q108
C135 10/16
To 0 2 Y/C, CN13
CN33
DRUM FF
CN34
V PULSE
To 0 2 Y/C, CN14
Q107 2SA1576 (QRS)
Q108 2SC4081 (QRS)
CN61
FRAME PULSE
From 1 1 VIDEO CN-V1
DRUM FF SM1
CTL ERASE MS3
V. REC MS1
FEH ON MS2
CAP FG SM3
PB CTL PULSE SM2
CAP CTL SM10
From/To 0 1 MECHACON (MAIN)
CAP LOCK2
D108 DA204K
C108 0.01
D106 DA204K
IC106 TC4S66F
Q119 DTC144EU
R182 47K
R104 10K
Q119
C156 0.1
IC107 TC4S66F
From 0 3 PRE/REC CN3
CN31
TP FM
GND
GND
NC
NC
From/To 0 1 MECHACON (MAIN)
TRACK SFT MS4
TRACK CHK MS5
MODE 4 SM4
4M CLK MS14
TP/COL SM5
S. DATA 2 MS8
S. CLK 2 MS7
CAP M REF SM9
CAP STOP MS13
CAP FWD MS12
TRACK ADV MS6
S CAP STOP MS11
A. PB MA1
A. PB MA2
EP/SP MA5
A. MUTE MA3
A. BIAS MA4
From 0 1 MECHACON (MAIN)
SWD 8V RA1
SWD 5.2V RA2
R SHORT (AUDIO) RA3
From 0 1 REGULATOR (MAIN)
C101 22/20
C102 47/16
C103 82/10
C154 1
C104 82/10
R167 1.5K
R168 3K
R169 300K
D103 SB05-05CP-X
L103
Q114
R164 1K
Q115
R166 470
C146 0.0022
IC105 UPC393G2
L102 47
Q114,Q116 2SB798 (LK)
R173 4.7K
R174 3K
R175 300K
D104 SB05-05CP-X
L104
Q116
R170 1K
Q117
R172 470
C148 0.0022
Q115,Q117 DTA123YU
Q101,Q102 DTC144EU
Q101
Q102
Q103 DTC144EU
Q104 DTC144EU
D102 MA141WK
R154 1K
TP101 DRUM FF
R127 PB SW POINT
R127 470K
R126 39K
C126 0.0047
C152 0.1
C105 10/16
C155 0.1
R150 1K
R151 1K
R152 560
R101 680
C106 10/16
C107 47/6.3
R103 330
R102 470K
C110 0.001
C111 10/16
C109 1/50
V. PULSE GEN
REC
REFERENCE COUNTER
IC101 VC2508A
REC CTL AMP
CTL DELAY COUNTER
TRACKING COUNTER
C/D
REC PB
PB REC
CAP SPEED DET
P. UP
CAP PHASE DET
DRUM SPEED DET
DRUM PHASE DET
HEAD SW PULSE GEN
C124 0.001
R123 100K
R122 100K
R121 100K
R120 100K
C123 0.001
C122 0.01
C121 0.0056
C120 0.01
R118 3.3K
R115 3.3K
R116 3.3K
R117 3.3K
R112 10K
R113 10K
TP105 CAP MON
Q109
R114 10K
TP104 DRUM MON
R108 10K
R109 1.5K
R110 1K
R111 150
C116 0.022
C117 0.022
C118 0.022
R119 1K
C119 0.0033
Q118 DTA144EU
TP102 PB CTL PULSE
Q109 DTC144EU
R181 2.2
C138 0.047
C139 0.1
C140 1
C141 1
C142 1
R155 47K
Q105 2SA1577(PQR)
R156 4.7K
Q106 DTC144EU
R160 2.2
R161 2.2
R162 2.2
IC102 LB1617M
REF REG
Vcc2
DRIVE AMP
HALL REG
ROTATE CONTROL
F/R
C143 0.022
C144 0.022
C145 0.022
R157 39K
R158 0
R159 120
R132 1M
Q110 2SA1576 (QRS)
Q111 2SC4081 (QRS)
R133 150K
R134 68K
R128 39K
R179 100K
R130 0
Q113
Q111
C127 22/16
R135 68K
FT101 AFZ74A001X1
DRUM TRAP
CAP TRAP
R136 10K
R137 68K
C128 0.1
Q113 DTC144EU
R138 15K
C129 0.0022
R139 1K
R163 1K
IC103
IC104
C130 0.0022
R140 82K
R141 1M
C131 0.22
R143 150K
R142 270K
R144 150K
C134 10/16
R505 33K
R506 0
IC104 LM2904E
From/To 0 4 DRUM MDA CN1
CN22
DRUM M POWER
DRUM M POWER
DRUM MP ERROR
From/To CAPSTAN MOTOR
CN23
MR GND
FG 2
MR 5V
FG 1
MG 3 (+)
COIL 1
HG 3 (−)
HG 1 (+)
HG 2 (−)
HG BIAS (−)
HG BIAS (+)
HG 2 (+)
COIL 3
HG 1 (−)
COIL 2
CN22
GND (MOTOR)
GND (MOTOR)
SWD 5.2V
GND (SIGNAL)
DRUM PG/FG
DRUM REF
From/To 0 4 DRUM MDA CN1
To 0 3 PRE/REC
CN31
DRUM FF
V SW A
V SW B
V SW C
V SW D
NC
CN12
J2
J1
PB CTL PULSE
DRUM FF
V SW A
CAP MON
DRUM MON
SWD 5.2V
TP FM
GND
NC
R145 1K
C501 0.01
IC103 UPC324G2
R501 33K
Q501 2SC4081 (QRS)
R503 10K
R502 1K
TP501 TPFM

Servo - Servo

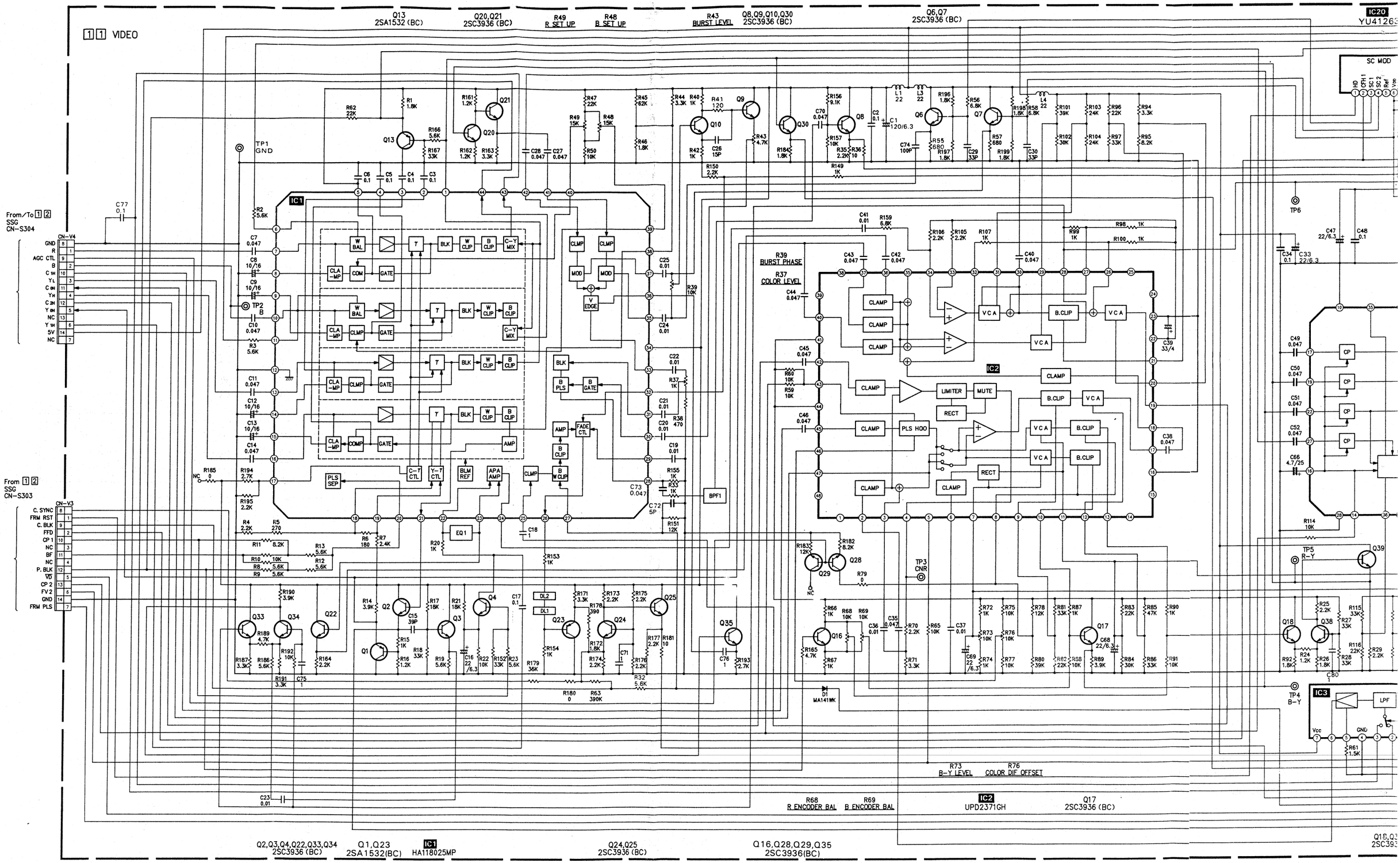


Steuerlogik - Mechacon

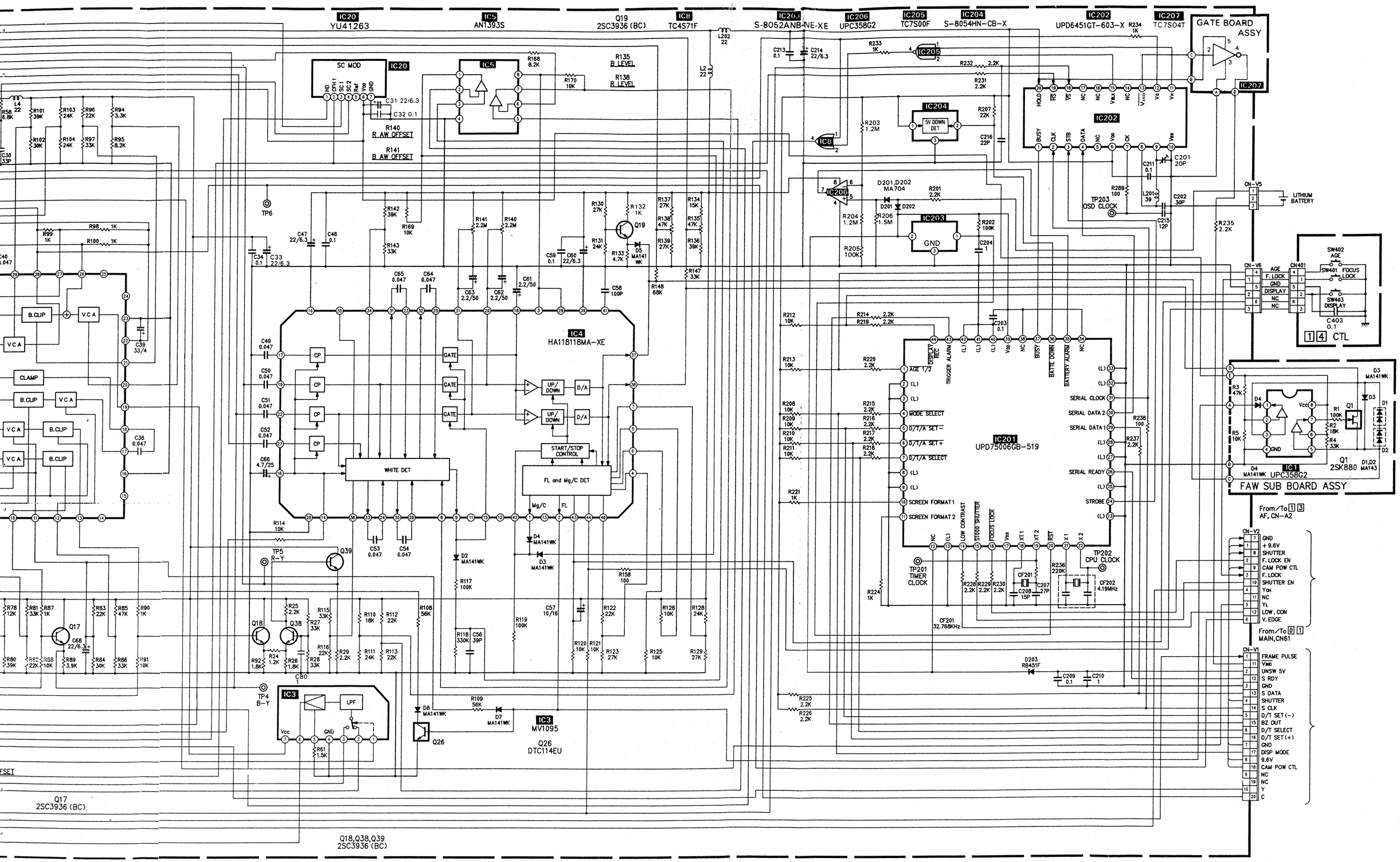


Vor- und Aufnahmeverstärker - Pre- and record amplifier

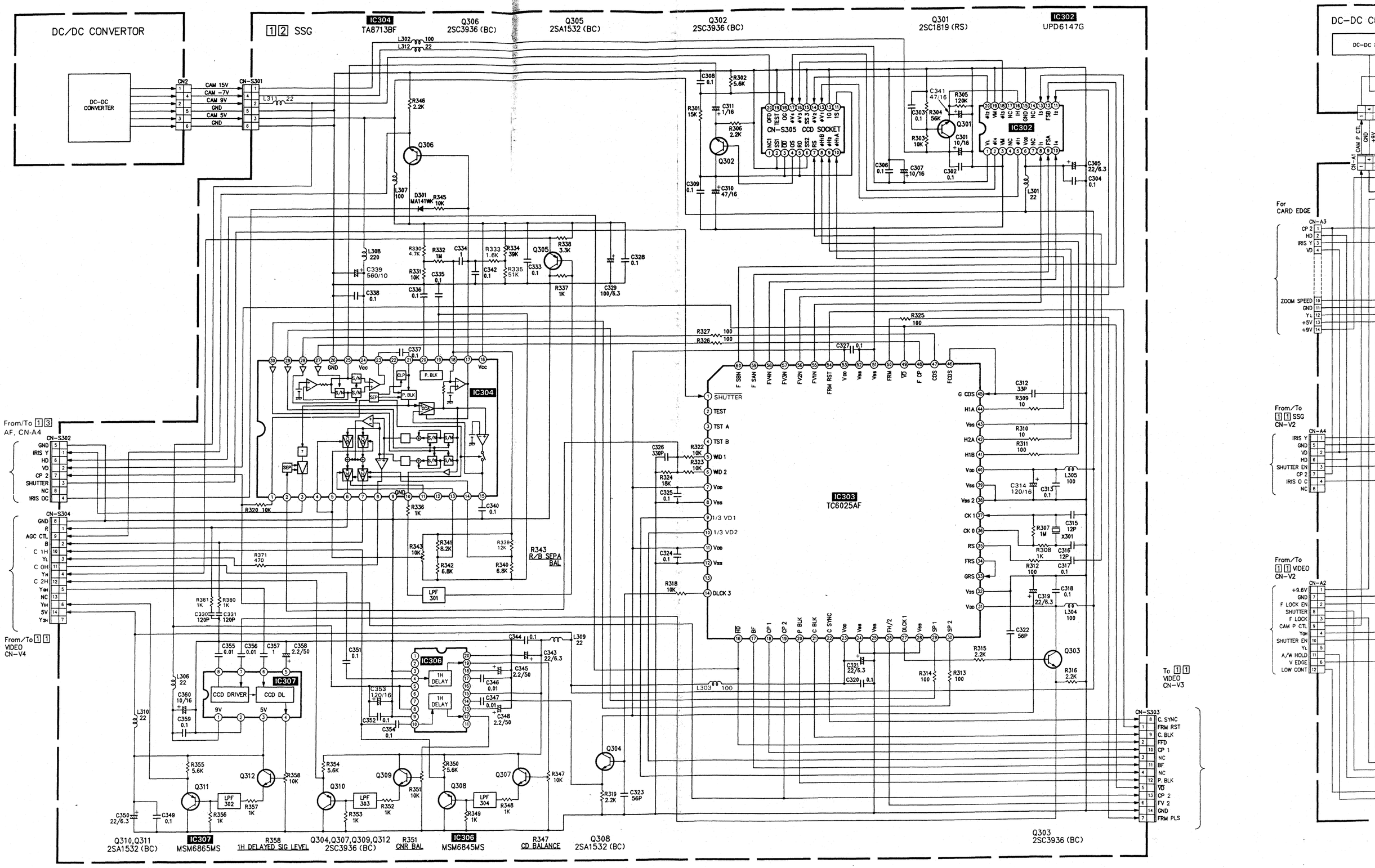
11 VIDEO



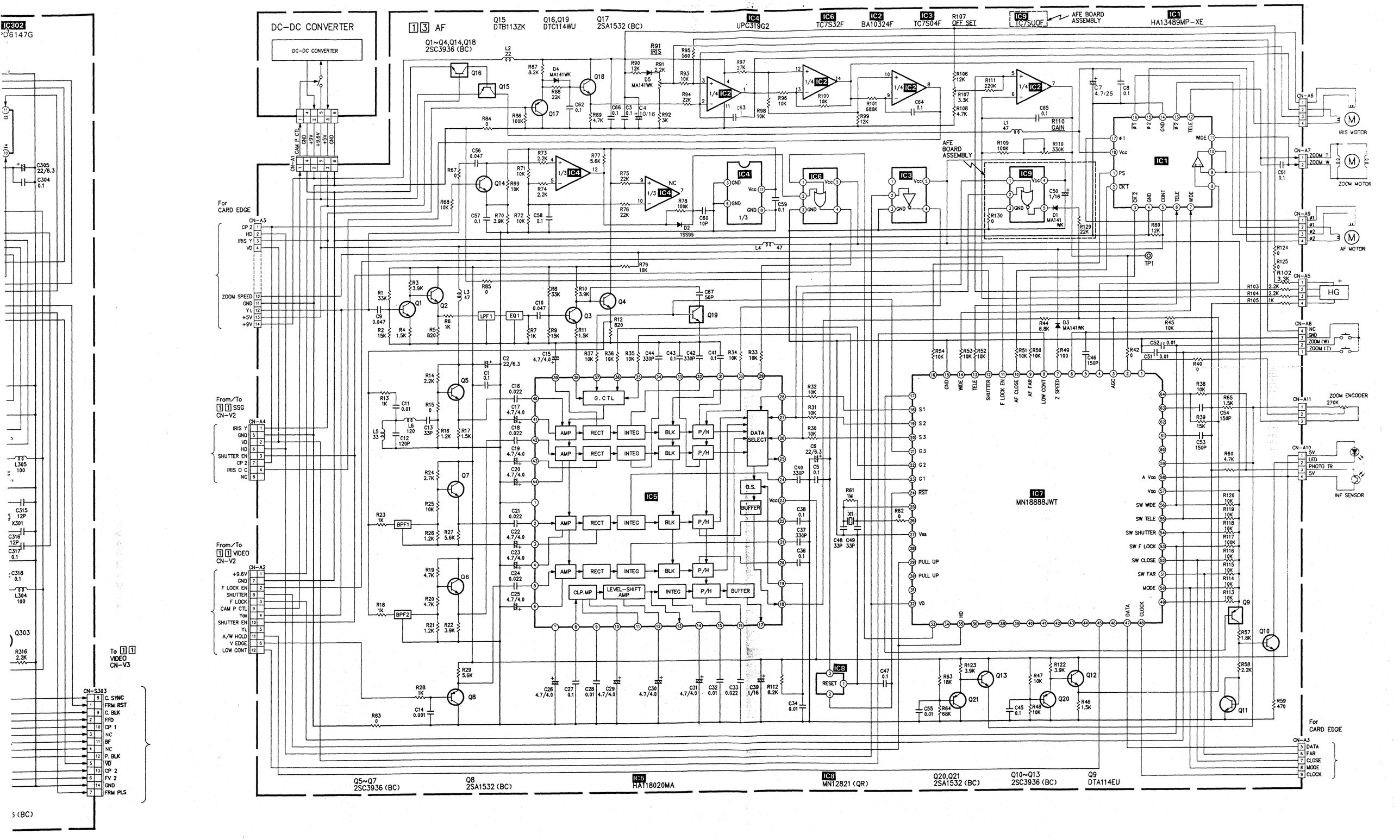
Video (Camera) - Video (Camera)



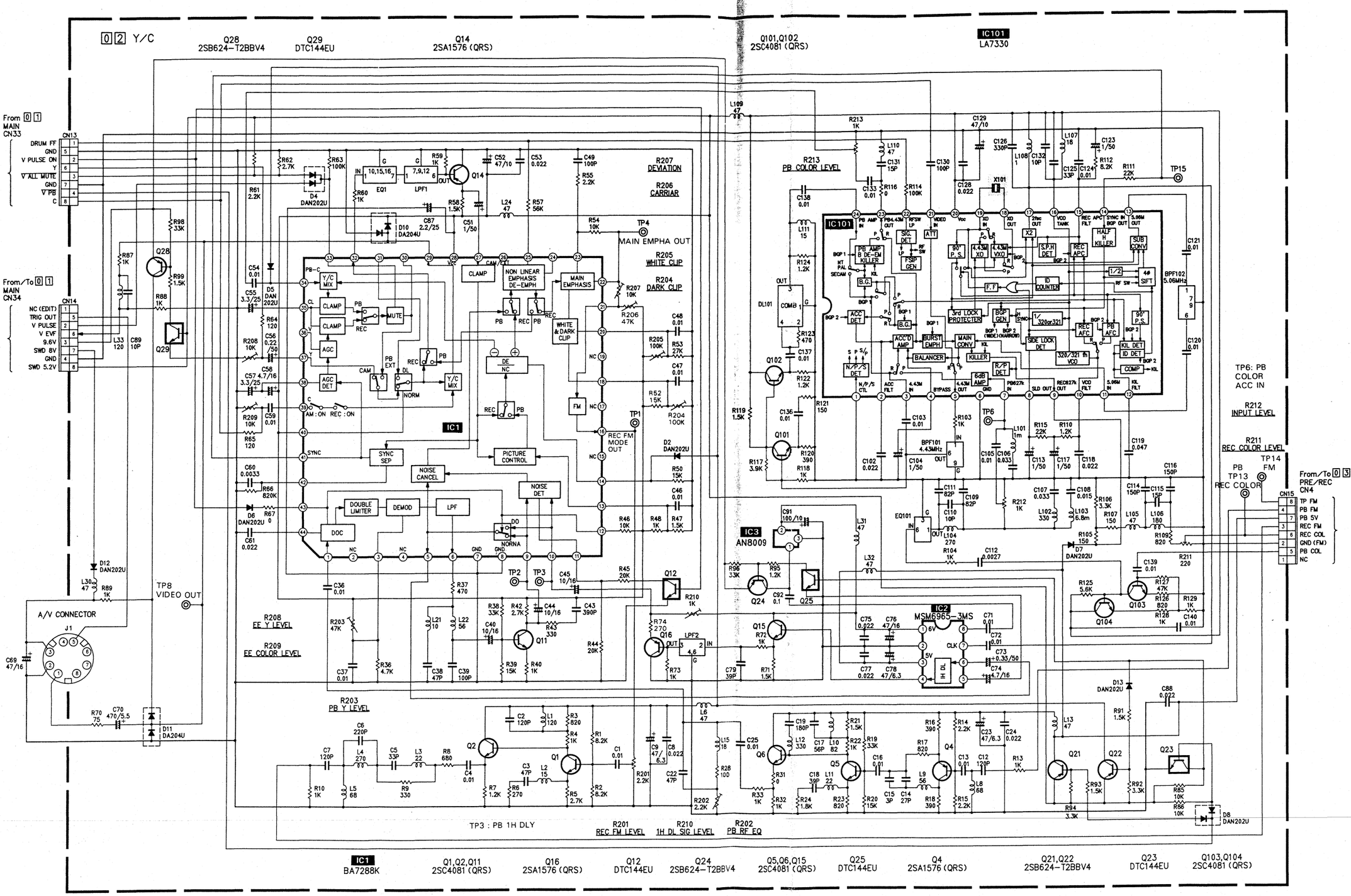
ideo (Camera) - Video (Camera)



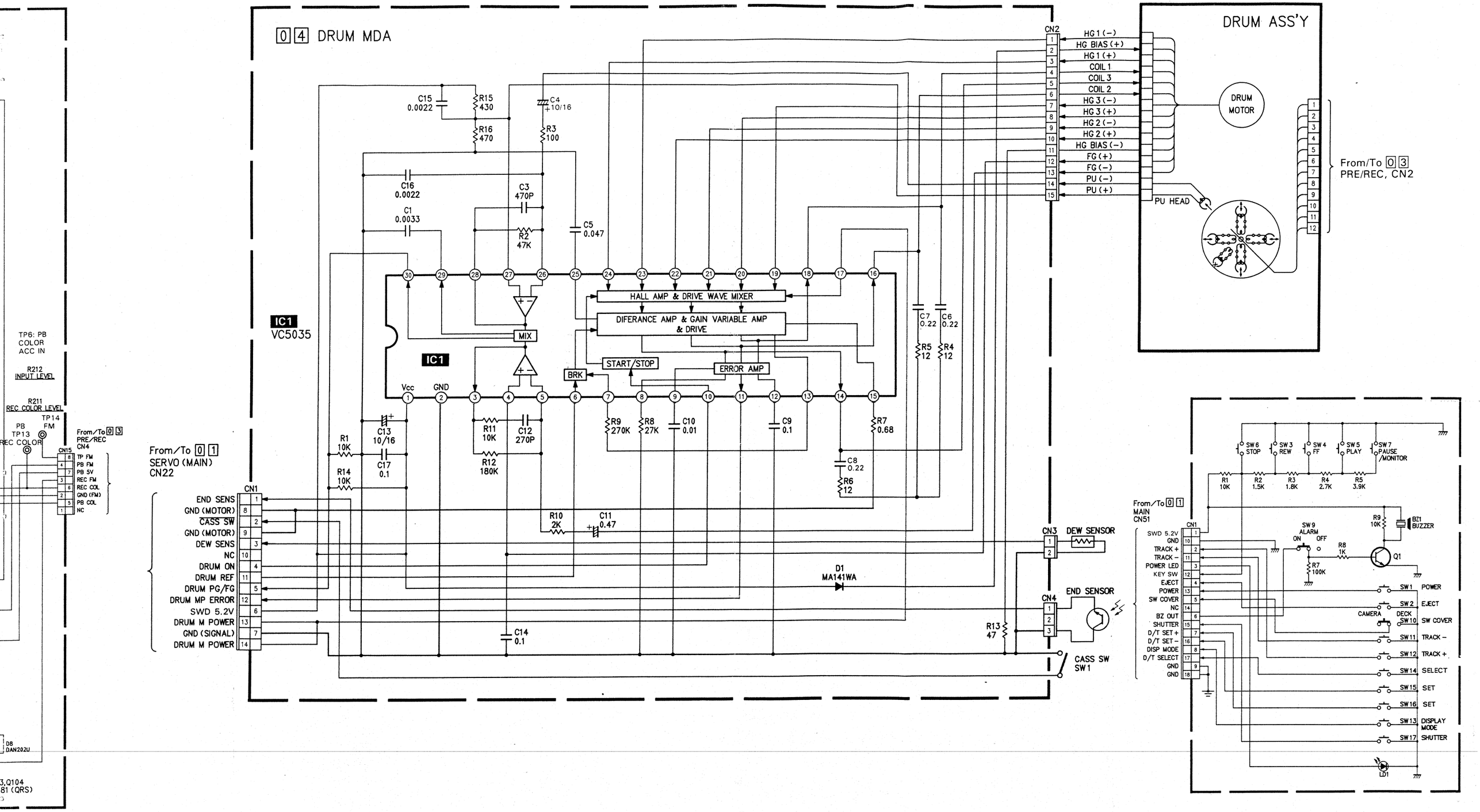
Taktgeber - SSG



Autofocus - Auto focus


02 Y/C
Q28
2SB624-T2BBV4
Q29
DTC144EU
Q14
2SA1576 (QRS)
Q101,Q102
2SC4081 (QRS)
IC101
LA7330
From 01
MAIN
CN33
DRUM FF
GND
V PULSE ON
Y
V ALL MUTE
GND
V PB
C
From/To 01
MAIN
CN34
NC (EDIT)
TRIG OUT
V PULSE
V EVF
9.6V
SWD 8V
GND
SWD 5.2V
A/V CONNECTOR
J1
TP8
VIDEO OUT
TP4
MAIN EMPHA OUT
R207
DEVIATION
R206
CARRIAR
R205
WHITE CLIP
R204
DARK CLIP
R208
EE Y LEVEL
R209
EE COLOR LEVEL
R203
PB Y LEVEL
R213
PB COLOR LEVEL
TP6: PB
COLOR
ACC IN
R212
INPUT LEVEL
R211
REC COLOR LEVEL
TP14
FM
TP13
REC COLOR
PB
From/To 03
PRE/REC
CN4
TP FM
PB FM
PB 5V
REC FM
REC COL
GND (FM)
PB COL
NC
From/To 01
SERVO (MAIN)
CN22
CN1
END SENS
GND (MOTOR)
CASS SW
GND (MOTOR)
DEW SENS
NC
DRUM ON
DRUM REF
DRUM PG/FG
DRUM MP ERROR
SWD 5.2V
DRUM M POWER
GND (SIGNAL)
DRUM M POWER
04 DRUM
IC1
VC5035
TP3 : PB 1H DLY
R201
REC FM LEVEL
R210
1H DL SIG LEVEL
R202
PB RF EQ
IC1
BA7288K
Q1,Q2,Q11
2SC4081 (QRS)
Q16
2SA1576 (QRS)
Q12
DTC144EU
Q24
2SB624-T2BBV4
Q5,Q6,Q15
2SC4081 (QRS)
Q25
DTC144EU
Q4
2SA1576 (QRS)
Q21,Q22
2SB624-T2BBV4
Q23
DTC144EU
Q103,Q104
2SC4081 (QRS)

Y/C - Y/C



Trommelservo MDA - Drum MDA

Bedienteil - Operation